

WHAT IS CLAIMED IS:

1. A nail gun and depth control spacer assembly for ejecting nails into a substrate, said
5 substrate containing two or more layers of roofing materials at least one of which is
compressible, wherein said nails penetrate the substrate but are prevented from
permanently compressing said compressible layer, comprising:

a nail gun including a driving cylinder having an inlet and outlet containing nails
therein, a trigger mechanism for selectively actuating the driving cylinder, and a base
10 portion associated with said outlet;

a depth control spacer attached to said base portion of said nail gun to permanently
remain thereon after discharge of said nails from said nail gun, wherein said depth control
spacer having a semi-oval configuration composed of a pressure sensitive adhesive layer
having a thickness of about 0.008" to 0.06" and a rigid layer of metal or polymeric
15 material having a thickness of about 0.125" to 0.250" comprising:

a distal end, a proximal end and a center portion;

a horizontal top portion at the distal end;

a first vertical side portion extending from the horizontal top portion towards
the proximal end;

20 a second side portion extending from the first vertical side portion towards
the proximal end at a slight angle from the vertical towards the center portion;

a third side portion at the proximal end extending from said second side
portion and enclosing an obtuse angle forming the tip of the spacer; and

an oval cavity having a longitudinal axis and a transverse axis in the center
25 portion of the depth control spacer, the longitudinal axis of which points in the vertical
direction, and the transverse axis of which points in the horizontal direction, wherein said
oval cavity has a longitudinal diameter of about 0.95" a transverse diameter of about
0.62", and an arc-radius of about 0.3".

30 2. The nail gun and depth control spacer assembly of claim 1 wherein said nail gun is a
pneumatic nail gun.

3. The nail gun and depth control spacer assembly of claim 1 wherein said rigid layer of metal is selected from the group consisting of steel, copper and aluminum.

4. The nail gun and depth control spacer assembly of claim 1 wherein said rigid layer is a thermoplastic material.

5. The nail gun and depth control spacer assembly of claim 1 wherein said rigid layer is a polymeric material selected from the group consisting of polyethylene, polypropylene, polystyrene, acrylic polymers and methacrylic polymers.

6. The nail gun and depth control spacer assembly of claim 1 wherein said pressure sensitive adhesive layer is covered by a release sheet prior to its attachment to said nail gun.

7. A method of securing a first sheet material to a second sheet material wherein a resilient material is interposed between said first sheet material and said second sheet material comprising the steps of:

laying a first sheet material on a support structure;

laying a resilient material on the first sheet material;

laying a second sheet material on the resilient material;

providing a nail gun and depth control spacer assembly comprising:

a nail gun including a driving cylinder having an inlet and outlet containing nails therein, a trigger mechanism for selectively actuating the driving cylinder, and a base portion associated with said outlet;

a depth control spacer attached to said base portion of said nail gun to permanently remain thereon after discharge of said nails from said nail gun, wherein said depth control spacer having a semi-oval configuration composed of a pressure sensitive adhesive layer having a thickness of about 0.008" to 0.06" and a semi-rigid or rigid layer of metal or polymeric material having a thickness of about 0.125" to 0.250" comprising:

a distal end, a proximal end and a center portion;

a horizontal top portion at the distal end;

a first vertical side portion extending from the horizontal top portion towards the proximal end;

a second side portion extending from the first vertical side portion towards the proximal end at a slight angle from the vertical towards the center portion;

5 a third side portion at the proximal end extending from said second side portion and enclosing an obtuse angle forming the tip of the depth control spacer; and

an oval cavity having a longitudinal axis and a transverse axis in the center portion of the depth control spacer, the longitudinal axis of which points in the vertical direction, and the transverse axis of which points in the horizontal direction,

10 wherein said oval cavity has a longitudinal diameter of about 0.95", a transverse diameter of about 0.62", and an arc radius of about 0.31"; and

wherein said depth control spacer prevents said nails from permanently compressing said resilient material;

15 actuating said driving cylinder by said trigger mechanism to eject a nail and driving said nail through said second sheet material, the resilient material, the first sheet material, and support structure, wherein said nail compresses said resilient material thereby reducing its thickness;

20 stopping said nail at a specific location by said depth control spacer engaging said second sheet material, whereby: said depth control spacer limits the penetration of said nails, and allowing spring-back of the resilient material from its reduced thickness to its thickness prior to its compression by said nail.

8. The method of claim 7 wherein said first sheet material and said second sheet material are roof shingles.

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9. The method of claim 8 wherein said fist roof shingles are asphalt shingles.

10. The method of claim 7 wherein said resilient material is a mat of randomly aligned synthetic fibers joined by phenolic or latex binding agents.

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11. The method of claim 10 wherein said mat has a thickness of about 3/4".

12. The method of claim 7 wherein said depth control spacer comprising a pressure sensitive layer having a thickness of about 0.008" - 0.06" and a semi-rigid or rigid layer having a thickness of about 0.125" – 0.250".

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13. The method of claim 7 wherein said semi-rigid or rigid layer is of a metal selected from the group consisting of steel, copper and aluminum.

14. The method of claim 7 wherein said semi-rigid or rigid layer is a thermoplastic material.

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15. The method of claim 7 wherein said semi-rigid or rigid layer is a polymeric material selected from the group consisting of polyethylene, polypropylene, polystyrene, acrylic polymers and methacrylic polymers.

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16. The method of claim 7 wherein said oval cavity has a longitudinal diameter of about 0.95", a transverse diameter of about 0.62", and an arc radius of about 0.31".